

REMARKS

Claims 38-52 are pending in the application. The Examiner has objected to claims 47-50 and 52 for depending on claim 45 instead of claim 46. The Examiner has rejected claims 38-52 under 35 U.S.C. §112 for including the claim limitation “in a manner transparent to said first controller and said first electronic device,” for which, according to the Examiner, there is no support in the originally-filed disclosure. The Examiner has rejected claims 38-52 under 35 U.S.C. §112 as being unpatentable over Elson, U.S. Patent Application Publication No. 2003/0014521 (“Elson”) in view of U.S. Patent No. 6,192,422 (“Daines”) and/or U.S. Patent No. 6,139,177 (“Venkatraman”).

Applicant has amended claims 38, 46-50 and 52 and cancelled claim 43. For the reasons set forth below, applicant believes that claims 38-42 and 44-52, as amended, are in condition for allowance, and respectfully requests that they be allowed.

Examiner’s Objections to Claims 47-50 and 52

The Examiner has objected to claims 47-50 and 52 for depending on claim 45 instead of claim 46. The Examiner states:

3. Claims 47-50 and 52 are objected to because of the following informalities: the claims should be amended to depend on independent Claim 46 or otherwise be corrected to depend on a method claim. Appropriate correction is required.

Applicant has amended claims 47-50 and 52 to depend on Claim 46, as required by the Examiner.

Examiner’s Rejection of Claims 38-52 under 35 U.S.C. §112

The Examiner has rejected claims 38-52 under 35 U.S.C. §112. The Examiner states:

5. Claims 38-52 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the

relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 38 and 46 recite the limitation "in a manner transparent to said first controller and said first controllable electronic device". Support for this limitation is absent in Applicant's originally filed disclosure.

Applicant disagrees that the claimed subject matter was not described in the specification as required by 35 U.S.C. §112. Applicant has amended independent claims 38 and 46 to remove the phrase "in a manner transparent to said first controller and said first controllable electronic device." Applicant has amended independent claim 38 to recite:

a pass through service configured to define a bi-directional path between said first of said plurality of configurable Input/Output ports and said second of said plurality of configurable Input/Output ports to enable the transmission of said first control signal received from said first controller at said second of said plurality of configurable Input/Output ports through said first of said plurality of configurable Input/Output ports to said first controllable electronic device without requiring any re-programming of said first controller

Applicant has amended independent claim 46 to recite:

defining a bi-directional path between said first and second of said plurality of configurable Input/Output ports to enable the transmission of said first control signal received from said first controller from said first of said plurality of configurable Input/Output ports to said first controllable electronic device without requiring any re-programming of said first controller;

Support for these amendments are found, for example, on pages 26 and 27 of the specification.

Applicant believes that claims 38-42 and 44-52, as amended, are in full compliance with 35 U.S.C. §112.

Examiner's Rejection of Claims 38-41, 43-48 and 52 under 35 U.S.C. §103(a)

The Examiner has rejected claims 38-41, 43-48 and 52 under 35 U.S.C. §103(a).

The Examiner states:

7. Claims 38-41, 43-48, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2003/0014521 to Elson et al. (hereinafter "Elson") and further in view of U.S. Patent No. 6,139,177 to Venkatraman et al. (hereinafter "Venkatraman").

Independent Claim 38

With respect to independent claim 38, the Examiner states:

8. As to Claim 38, Elson discloses an apparatus for providing universal web access functionality to one or more electronic devices comprising:

a plurality of configurable Input/Output ports (Elson; Figures 10, 20, and 30);

a first of said plurality of configurable Input/Output ports configured to connect to a first controllable electronic device and to obtain status information about said first controllable electronic device (Elson; paragraphs 3, 114-116, 145, and 147-148; checking the status of the resource);

a second of said plurality of configurable Input/Output ports configured to connect to a first controller and to receive control signals from said first controller for controlling said first controllable electronic device, said second of said plurality of configurable Input/Output ports configured to pass said control signals received from said first controller through to said first of said plurality of configurable Input/Output ports in a manner transparent to said first controller and said first controllable electronic device (Elson; paragraphs 3, 114-116, and 147-148; passing control signals transparently between controller and resource);

Elson does not explicitly disclose, however Venkatraman discloses a web server configured to serve a web page providing said status information about said first controllable electronic device (Venkatraman; Figures 2-3, column 1 lines 62-67 and column 2 lines 1-29; web server with web page to provide status information about resources).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify a contention manager, as disclosed by Elson, to include a web server, as disclosed by Venkatraman, in order to provide web access functionality to a device (Venkatraman; column 1 lines 62-67 and column 2 lines 1-29).

Applicant respectfully disagrees that claim 38 is unpatentable under 35 U.S.C. §103 over Elson in view of Venkatraman.

First, Elson does not disclose “an apparatus for providing universal web access functionality to one or more electronic devices,” as asserted by the Examiner. Instead, Elson discloses a computer “gateway” for an automobile that provides device drivers allowing application programs to request access to system resources (such as, for example, the car’s speakers), and that manages requests for access to such resources. To access those resources, an application must have knowledge of the gateway and must configure its request in the proper syntax required by the gateway’s operating system.

Second, Elson does not disclose a first of a plurality of configurable Input/Output ports configured to communicate with a first controllable electronic device, said first controllable electronic device configured to be controllable by a first control signal and to transmit status information about said first controllable electronic device, as claimed in independent claim 38, as amended. The Examiner asserts that paragraphs 3, 114-116, 145, and 147-148 of Elson disclose “a first of said plurality of configurable Input/Output ports configured to connect to a first controllable electronic device and to obtain status information about said first controllable electronic device.” These paragraphs of Elson state:

[0003] The disclosed embodiments relate to systems that process numerous requests from applications for access to physical resources such as communications ports, user interfaces, sensors, or actuators.

[0114] Control of access to peripherals or other external resources is effected in an embodiment using a combination of the FUSD architecture along with a set of resource managers residing in user space. This accommodates multiple applications which make competing resource access requests with differing levels of priority, security, and/or cost.

[0115] FIG. 10 is a block diagram showing the management of contention for shared resources on a processing platform 1000 including the platform architecture of an embodiment. FIG. 11 is a flow diagram of a general method for performing shared resource access management, under an embodiment. In this example there are a set of applications App 1, App 2, App 3 some of which may be native code and others of which might have been downloaded to the platform after deployment, e.g., as Java applets. Applications 1 and 2 want access to Resource 1, but have different priorities and quality of service requirements. The standard device driver calls 1020 from App 1 and App 2 go to the FUSD module 1002, or redirection module, in kernel space 1099 via the VFS 1004. The FUSD module 1002 then communicates 1022 with the resource managers 1012. The resource managers 1012 respond 1022 with a schedule that accommodates the requests, and then Apps 1 and 2 gain access to Resource 1 in the appropriate sequence. Application 3 on the other hand might be trusted code which can directly access Resource 2 without the mediation of the resource managers 1012. These management features are particularly valuable in an automotive telematics context as software may be remotely downloaded after the purchase of the vehicle, and multiple users may compete for resources such as the car speakers and the various modes of external communications.

[0116] More specifically, an outbound link exchange (OLX) and outbound link control (OLC) together may be used as resource managers 1012 in a telematics system and associated gateway to control access to cost and bandwidth sensitive resources such as cellular telephones, 802.11 radios, Bluetooth radios, or such other connections to the outside world as may exist. In the following description, the OLX and OLC are hosted on an automotive gateway, such as the Sensoria Corporation mgate, described herein. Many devices can potentially communicate with a gateway equipped with such ports, but not all of the devices are authorized for access to every port, and even for those ports for which the devices are authorized there are cost-of-use constraints to consider. Moreover, with many different applications hosted on the gateway there is contention for access to these ports that must be resolved. It is unrealistic to expect that each of the applications will negotiate this among themselves. By routing the device calls through the FUSD and back to the OLX and OLC residing in user space the appropriate device driver calls can then be made taking into account the resource issues described above. The calling application can then be informed of which resources it can actually access, and is not required to be specially configured to take into account the other applications that may request the same set of resources. Moreover, all of the driver calls use standard POSIX protocols.

[0145] The UAX is responsible for granting application requests to user interfaces. To do so, it validates the request against UAX policies and

checks with the UAC as to availability of the requested resource. The UAC is in communication with the Hardware Access Device Drivers (HADDs). The UAC informs the UAX of the resource status. The UAC thus provides a layer of abstraction to the UAX.

[0147] FIG. 21 is a block diagram showing the interactions among the UAX and UAC when handling an application request, under the platform software architecture of an embodiment. In this process, the UAX performs the roles of request granting (policy checking, resource status checking) and queuing and scheduling of requests. The UAC provides a unique, standardized point of access to the resource status for the UAX and a unique, standardized point of access to all the HADDs for the applications. The UAX and UAC interactions provide the policies that mediate access to the resources. While the HADDs contain the mechanisms for access (that is, issue the commands for particular actions to be taken by particular physical resources), the UAX and UAC determine which competing applications can gain access, and when they can gain access. Thus, neither applications nor HADDs need to be designed to account for the scenario in which multiple applications attempt to access the same HADD. Nor does application design need to consider the scenario in which multiple HADDs are accessed by the same application with kernel space controllers.

[0148] There are three types of request an application may issue to the UAX, including a send, a queue, and a schedule. A send is a request immediately sent to a resource. A queue is a request that is queued for the resource. A time-out may be specified with a queue. A schedule is a request that is scheduled with the resource. A time or time frame may accompany a schedule.

The above paragraphs of Elston cited by the Examiner disclose a system for controlling access by application programs to various system resources, which can include things like “communications ports, user interfaces, sensors, or actuators.” They do not disclose “a first of a plurality of configurable Input/Output ports configured to communicate with a first controllable electronic device, said first controllable electronic device configured to be controllable by a first control signal and to transmit status information about said first controllable electronic device” as claimed.

Third, Elson does not disclose “a pass through service configured to define a bi-directional path between said first of said plurality of configurable Input/Output ports and said second of said plurality of configurable Input/Output ports to enable the transmission

of said first control signal received from said first controller at said second of said plurality of configurable Input/Output ports through said first of said plurality of configurable Input/Output ports to said first controllable electronic device without requiring any re-programming of said first controller” as claimed in claim 38, as amended. The Examiner refers to the same paragraphs cited above (3, 114-116, and 147-148) as disclosing the claimed pass through service. Specifically, the Examiner asserts that those paragraphs disclose “passing control signals transparently between controller and resource.”

Applicant respectfully disagrees. To start with, Elson does not disclose a “first controller” as claimed, that communicates with a second configurable Input/Output port and that is configured to transmit the first control signal, i.e., the control signal that controls the first controllable electronic device. The Examiner asserts that the applications of Elson that issue requests for resources are the claimed “first controller.” However, those applications are not connected to a second Input/Output port: they are computer programs that run in the operating system’s user space.

Further, Elson does not disclose defining a bi-directional path from a first configurable Input/Output port to which the controllable electronic device is connected to a second configurable Input/Output port to which the first controller is connected. There are no port-to-port paths created in the system of Elson.

Finally, the applications of Elson, in order to obtain access to resources, must issue operating system specific device driver calls using standard POSIX protocols. In cases where there is contention for resources, the requests in addition are managed by a resource manager. In other cases, the resource manager is bypassed. But in all cases, access by applications to resources requires specific application code written to issue the required POSIX device driver requests. The portion of paragraph [0115] of Elson that talks about “Application 3” being a “trusted application” that can “directly access Resource 3” refers to the fact that the resource manager is bypassed, not that Application 3 directly accesses Resource 2 without using the operating system and device drivers. This is clear from Figure 10 of Elson, reproduced below:

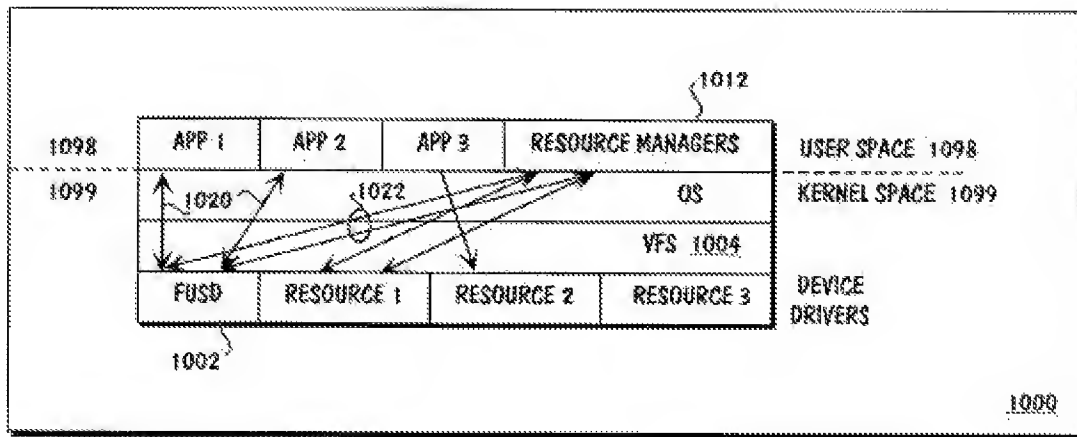


FIG. 10

The Examiner acknowledges that Elson does not disclose the “web server configured to serve a web page providing said status information about said first controllable electronic device” of claim 38. The Examiner asserts, however, that Venkatraman discloses a web server, and it would be obvious to combine Venkatraman with Elson “to provide web access functionality to a device.”

Applicant respectfully disagrees. Venkatraman discloses an embedded web access functionality for providing web access to a device by embedding the functionality within the device itself. That is the opposite of the present invention, which provides web access functionality through an apparatus that is apart from the device, that requires not modification to the device, and that provides the web access functionality using control and status signals already received/transmitted by the device. The result of combining Venkatraman with Elson would not be the present invention, but a collection of “resources” each of which had been modified to include embedded web access functionality. Further, given that the “resources” of Elson are all within the confines of a car, there is no motivation to provide them web access functionality, so there is no motivation to combine Venkatraman with Elson in the first place.

In sum, Neither Elson or Venkatraman, alone or in combination, disclose, teach or suggest the invention claimed in independent claim 38, as amended. Accordingly, Applicant believes that claim 38 is allowable, and respectfully requests that claim 38 be allowed.

Dependent Claims 39-42 and 44-45

Dependent claims 39-42 and 44-45 are dependent on independent claim 38 and include all of the limitations of claim 38 as well as additional limitations. Accordingly, Applicant believes that claims 39-42 and 44-45 are allowable for the same reasons set forth above for independent claim 38, and respectfully requests that claims 39-42 and 44-45 be allowed.

Independent Claim 46

Independent claim 46 is a method claim that includes the same distinguishing features over the prior art as discussed above with respect to independent claim 38. Accordingly, Applicant believes that independent claim 46 is allowable for the same reasons set forth above for independent claim 38, and respectfully requests that claim 46 be allowed.

Dependent Claims 47-52

Dependent claims 47-52 are dependent on independent claim 46 and include all of the limitations of claim 46 as well as additional limitations. Accordingly, Applicant believes that claims 47-52 are allowable for the same reasons set forth above for independent claim 46, and respectfully requests that claims 47-52 be allowed.

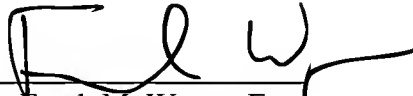
CONCLUSION

For the above reasons, applicant believes that new claims 38-42 and 44-52 are patentably distinct from the prior art of record. Accordingly, applicant respectfully requests that they be allowed.

Respectfully submitted,

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